

**COTTAGE POLLUTION
CONTROL PROGRAM**

MUSKOKA-HALIBURTON

**FIRST PRINTING
APRIL, 1981**

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MINISTRY OF THE
ENVIRONMENT



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COTTAGE POLLUTION CONTROL PROGRAM

MUSKOKA-HALIBURTON

FIRST PRINTING APRIL, 1981

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GRAVENHURST, ONTARIO

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COTTAGE POLLUTION CONTROL PROGRAM

1980

DISTRICT MUNICIPALITY OF MUSKOKA

Black Lake	Township of Muskoka Lakes
Lake Muskoka	Township of Muskoka Lakes
Stewart Lake	Township of Georgian Bay

PROVISIONAL COUNTY OF HALIBURTON

Kashagawigamog Lake	Minden Township
Soyers Lake	Minden Township

REPORT PREPARED BY STAFF
OF THE MUNICIPAL & PRIVATE ABATEMENT SECTION
MUSKOKA-HALIBURTON DISTRICT OFFICE
GRAVENHURST

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PREFACE

Ontario's thousands of beautiful inland lakes provide an abundant resource for recreational enjoyment. To protect the quality of these waters, a delicate environmental balance must be maintained.

A heavy influx of people may subject a lake and its surrounding environment to great stress. Uncontrolled development and imprudent use of our recreational lakes may cause their deterioration and destroy their natural qualities.

The Ontario Ministry of the Environment is attempting to bring some of these stress factors under control by a variety of programs. One of these, the Cottage Pollution Control Program, was initiated in 1970 to study the cottage waste disposal problem, to evaluate existing waste disposal systems and to enforce repairs to those found to be unsatisfactory.

The Ministry is carrying on research to improve the knowledge of private sewage systems and the movement of sewage effluent in shallow soils.

SUMMARY

The Cottage Pollution Control Program was established to detect and have corrected faulty private sewage disposal systems of cottages located on recreational lakes. The objective of the program is to investigate and, in conjunction with the owner, to undertake abatement work on those systems found to be faulty.

In 1980, 738 private sewage disposal systems were inspected on Black Lake, Lake Muskoka and Stewart Lake in the District of Muskoka and Kashagawigamog Lake and Soyers Lake in the Provisional County of Haliburton. The inspection of these systems indicated that 32% were performing satisfactorily, 39% were seriously substandard, 18% were discharging washwater or solid waste onto the ground surface, 4% were direct polluters and 7% were unclassified after the initial detection survey. See Appendix I for the summary of inspection results.

As of December 31st, 1980, 196 agreements for corrective work to be carried out had been signed by the owners. Corrections have been completed and inspected for 172 systems; 289 letters have been sent to owners advising them that their systems are undersized and should be upgraded in the near future.

Contact with owners was continued during the winter to arrange for corrective action to be carried out in the spring of 1981.

COTTAGE POLLUTION CONTROL SURVEY

PREPARATION

During the fall or winter of 1979, a reconnaissance and mapping program was undertaken by snowmobile on the lakes.

The snowmobile crews counted the number of establishments on each lake. Every one hundredth establishment on the shoreline was photographed and described. The cottages and non cottage properties such as marinas, camp grounds and lodges were then plotted on maps.

Data obtained from the snowmobile work, as well as that from Cottager Associations and other agencies, was used to prepare a work schedule for the student crews in the summer.

The co-operation of Cottager Associations contributed greatly to the success of the program. Prior to the commencement of the survey of each lake, a meeting is usually held with the Association. Members are given a brief outline of the survey procedures to be followed and also the information that would be required from each cottager. In certain cases, a mid-summer meeting is arranged with the Association during which abatement procedures are discussed.

In the event that a Cottage Association does not exist, notices are posted throughout the area, where people may congregate (local stores, post offices, public docks, etc.). This situation usually exists along rivers or small lakes.

Detection Surveys

The crews, each composed of two students, began the survey of the lake by preparing a description log. Each establishment was systematically numbered and accurately described to facilitate the location of the premises by other staff.

Each establishment was then inspected to determine the type, size, location and design of sewage disposal system; the soil type and depth in the area of all tile beds; the source of drinking water; and other related factors.

A Preliminary performance classification of all waste disposal systems was made by the students prior to referring the file to their supervisor for final classification.

Classification of Sewage Disposal Systems

The sewage disposal systems of all premises surveyed were classified into one of the following groups.

1. Satisfactory - the system meets all current standards of good design, construction and location, and is properly maintained.
2. Satisfactory (Acceptable) Performance - the system may not quite meet current standards of design and construction but is properly located with respect to distance from lake, well etc., and is maintained in good condition.

Classification of Sewage Disposal Systems (Cont'd)

3. Seriously Substandard - a system which does not meet current standards of design, construction and location and/or is in a state of neglect. Although this system is not deemed to be causing pollution at the time of inspection, a potential hazard exists. The owner is notified of the deficiency and is advised that consideration should be given to updating the system in the near future.
4. Nuisance (Wash Water) - a system causing wash water to be exposed on the surface of the ground either directly through a waste pipe or escaping from a seepage pit. Such a condition is known as a Public Health Nuisance. Wash water discharged from any sanitary fixture is contaminated and creates an unhealthy environment. Phosphates and other nutrients from waste water discharges encourage weed growth and affect the aesthetic quality of the lake.
5. Nuisance (Toilet and Solid Waste) - a system causing faecal or urinary discharges to be exposed on the surface of the ground, either directly through a pipe or escaping from some part of the sewage disposal system. Also included in this classification is "solid waste" or garbage of a kind which can cause a "Nuisance"; for example, domestic garbage containing food waste.
6. Director Polluter - a system which is permitting sewage to contaminate the ground water or to reach the lake either by direct discharge through a pipe or ditch or over the ground surface.

Classification of Sewage Disposal Systems (Cont'd)

7. Unclassified (temporarily) - a system which has been given a preliminary classification by the student inspector where he feels he cannot use any of the preceeding classifications and has doubts about the system, or any part of it. These systems require further inspection by the supervisor who will attempt to make a final classification after a thorough investigation.

8. Unclassified - a system (or systems) where it is not possible by the end of the survey to make a classification. This category includes only a few abandoned premises in a dilapidated condition with a system that is obviously not in use and could not be used.

CORRECTIVE PROCEDURE

After a file is examined by the supervisor and the original classification is confirmed or altered, it is referred to an Environmental Officer if abatement of a problem is required. The Officer then interviews the establishment owner to advise him of the findings and discuss corrective action. If the owner agrees with the findings, a corrective program is initiated. He is asked to sign a "Pollution Abatement Report" stating the problems found and corrections required to be completed by a specific date. A final inspection is carried out upon completion of the corrective work and the sewage disposal system file is appropriately reclassified. Occasionally an owner refuses to comply with a correction program and legal action must be initiated.

In the case of commercial establishments, this procedure is often more complicated, requiring an engineering study and the submission of plans and soil analysis reports for approval. Except where there is direct pollution, the owner is contacted and is instructed to submit plans for corrective measures to be completed prior to the opening of the next commercial season.

A direct polluter must take corrective action immediately to prevent any further deterioration of water quality in the lake.

METHODS OF SEWAGE DISPOSAL

Much of the shoreline property in Muskoka and Haliburton has minimal soil depth over bedrock. Therefore it is generally unsuitable, in a natural state, for sub-surface sewage disposal. This can be remedied in some areas by placing suitable filter material over an area capable of supporting a sub-surface sewage disposal system.

Methods of Sewage Disposal (Cont'd)

The use of a holding tank may provide a solution for the disposal of sewage and may be recommended if no other solution is feasible and a contract for the pump-out of the tank contents can be secured. (It should be noted that disposal sites for holding tank contents are rapidly nearing capacity. This has resulted in the restriction of the use of holding tanks.)

On some lots where there is restricted space for a conventional sewage disposal system, the installation of a proprietary aerobic sewage treatment system may provide a viable alternative.

Recently there have been many developments in sewage disposal systems and the Ministry of the Environment is continually monitoring new systems which are marketed in Ontario. Some available are the composting and incinerating type toilets.

The Ministry of the Environment or other designated authority should be consulted and approval obtained before any sewage disposal system is installed.

ABATEMENT PROGRESS FROM 1979 COTTAGE POLLUTION CONTROL PROGRAM

During the summer of 1979, the Cottage Pollution Control Program was conducted on the following lakes: Nine Mile Lake and part of Lake Muskoka in the District Municipality of Muskoka, and Esson Lake, Kashagawigamog Lake and Miskwabi Lake in the Provisional County of Haliburton. A total of 1,329 private sewage disposal systems were inspected. Of these, 30% were performing satisfactorily, 38% were found to be seriously substandard,

22% were discharging wash water or solid waste onto the ground surface, 2% were direct polluters and 8% were unclassified after the initial detection survey. All of the owners with seriously substandard systems were contacted and advised that their system should be watched carefully and may require updating in the near future. As of January 1st, 1981, corrective action on 98% of the systems which required upgrading was completed in Muskoka-Haliburton. The owners of the majority of the remaining systems requiring upgrading have signed agreements for completion during the summer of 1981.

Legal action will be initiated against the few remaining owners who have refused to respond to several attempts by Environmental Officers to have corrective action carried out.

"1980 COTTAGE POLLUTION CONTROL PROGRAM"

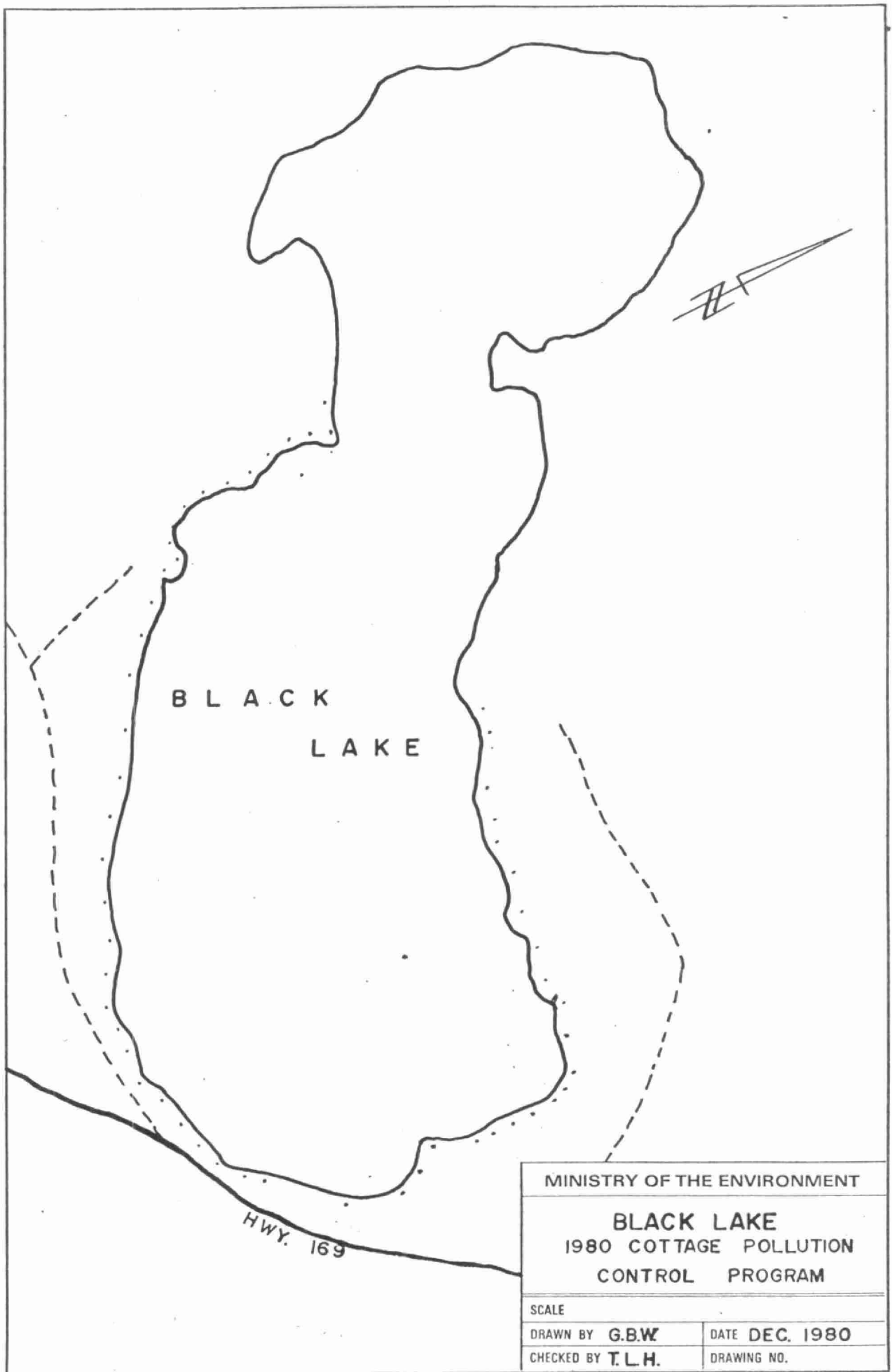
BLACK LAKE

The geographic description of Black Lake is District of Muskoka, area municipality of the Township of Muskoka Lakes, Wood Ward, Latitude 45° 00', Longitude 79° 32'. The perimeter of the lake is 2.4 miles (4.0 kilometres) and the surface area is 126 acres (51 hectares). The maximum water depth is 11 feet (3.4 metres) and the mean depth is 6 feet (1.8 metres). The lake is part of the Muskoka Drainage Basin. Approximately 50% of the shoreline is weed covered.

The shoreline is characterized by shallow till and rock ridges except at the north end of the lake where a kame moraine is the predominant feature.

There were 51 private sewage disposal systems inspected on Black Lake during the summer of 1980. Of these, 17 or 33.3% were classified as seriously substandard, 6 or 11.8% were unsatisfactory due to improper disposal of solid waste or wash water, 2 or 3.9% were classified as direct polluters and one system or 2.0% were unclassified by the students at the end of the survey.

As of December 31st, 1980, 5 faulty systems have been corrected and 4 owners have signed agreements to have work completed during the construction season of 1981.



KASHAGAWIGAMOG LAKE

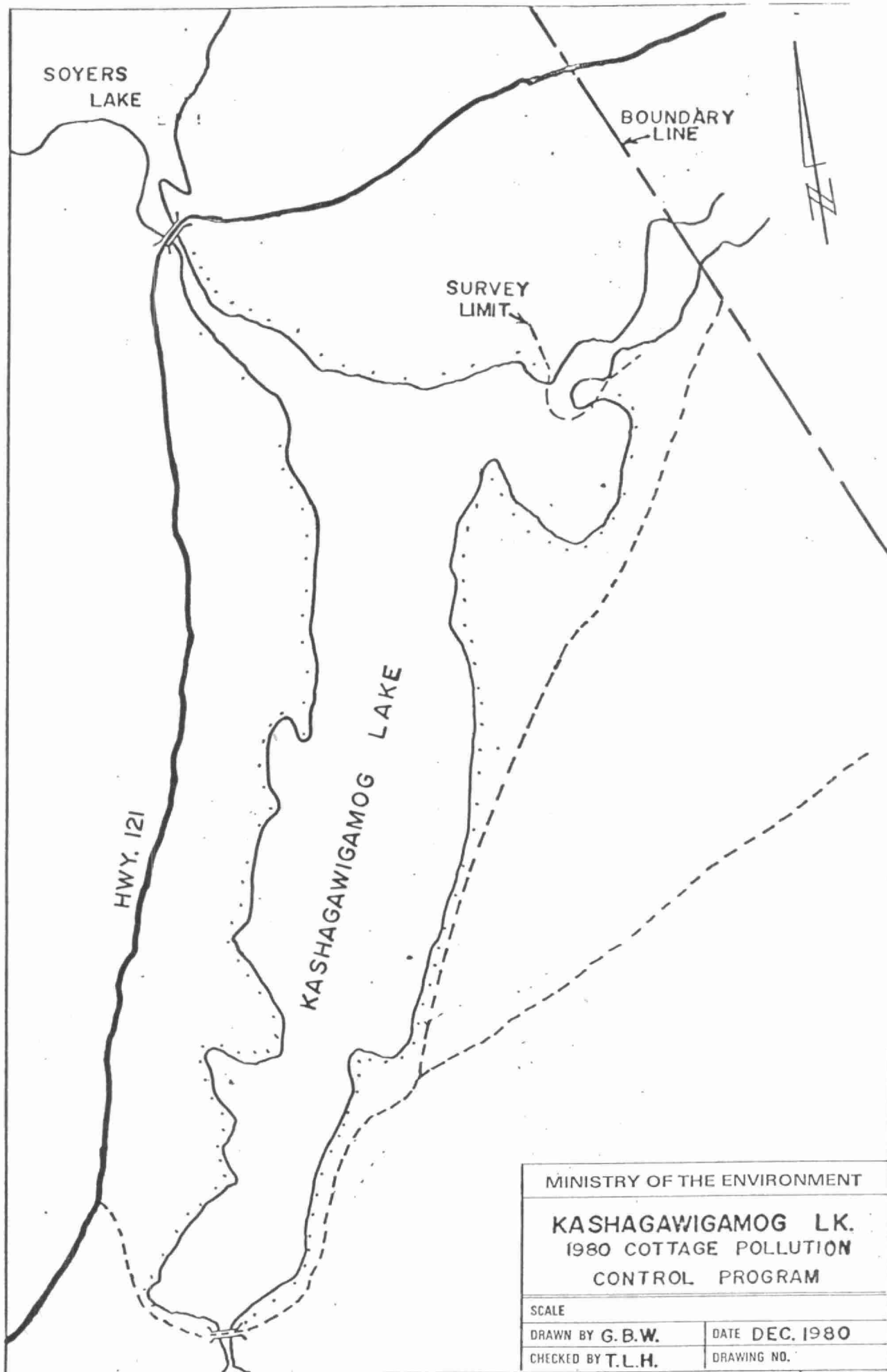
Kashagawigamog is located in the County of Haliburton, Minden Township, Latitude $44^{\circ} 59'$, Longitude $78^{\circ} 36'$. The south portion of the lake was surveyed during 1980. The northern portion was surveyed in 1979.

The perimeter of the lake is 21.9 miles (35.3 kilometres). The surface area is 2,020 acres (808 hectares). The maximum depth is 130 feet (40.6 metres), the mean depth is 43 feet (13 metres). The lake is part of the Trent River drainage basin.

The shoreline in the 1980 survey area is mainly shallow till and rock ridges; however, on the east side of the lake, two drumlins are found and also a drumlinized till plain.

There were 273 private sewage disposal systems inspected on Kashagawigamog Lake during the summer of 1980. Of these, 122 or 44.7% were classified as seriously substandard, 45 or 16.5% were unsatisfactory due to improper disposal of solid waste or wash water, 13 or 4.8% were classified as direct polluters and 22 systems or 8.0% were unclassified by the students at the end of the survey.

As of December 31st, 1980, 68 faulty systems have been corrected and 7 owners have signed agreements to have work completed during the construction season of 1981. The remainder were notified by letter of their problem and Ministry Environmental Officers are currently directing their efforts towards obtaining commitments from these owners.



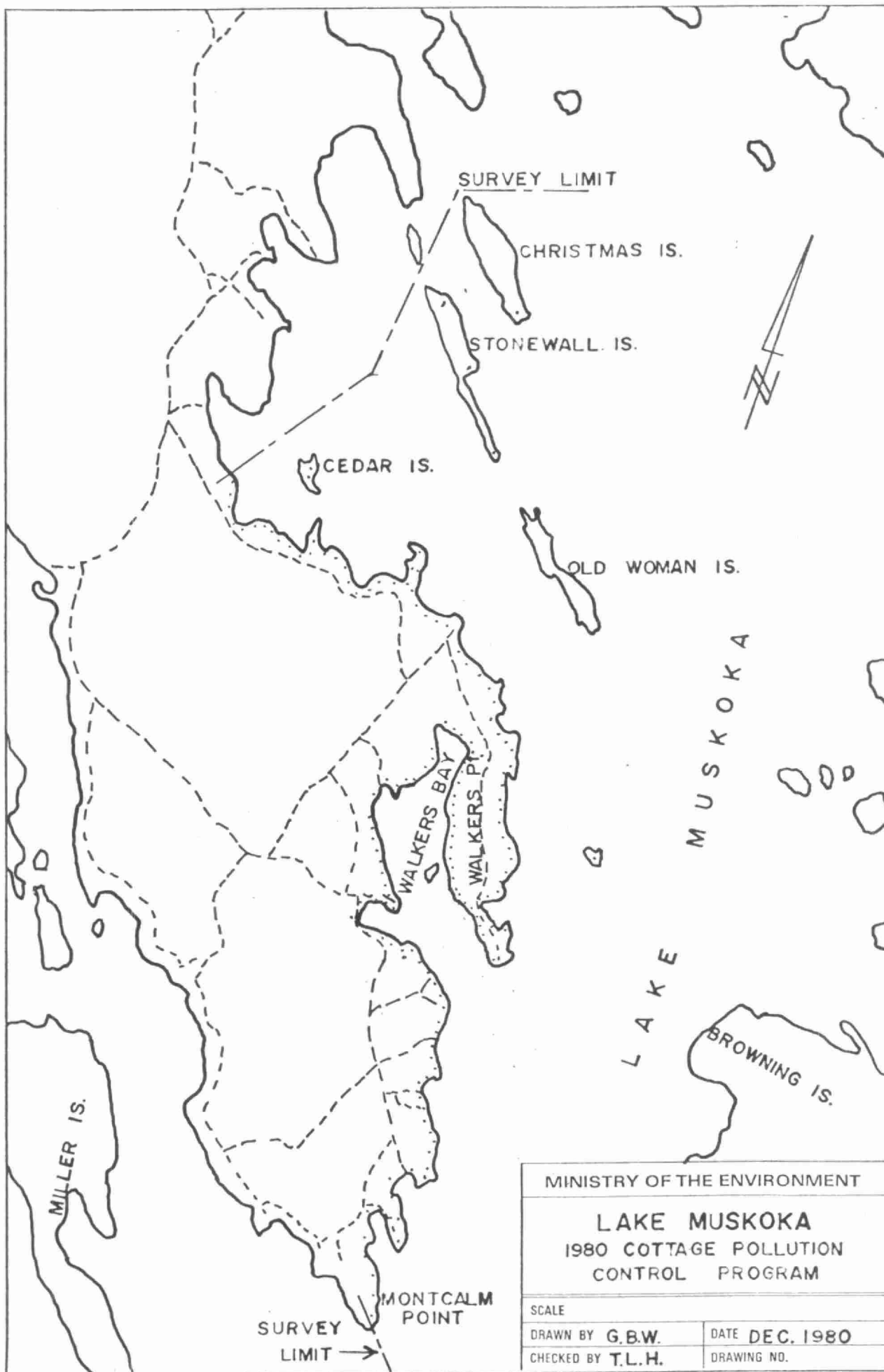
LAKE MUSKOKA

The area of Lake Muskoka surveyed during 1980 may be described as being located in the District of Muskoka, area municipality of the Township of Muskoka Lakes, Wood Ward, Latitude $45^{\circ} 01'$, Longitude $79^{\circ} 27'$. Approximately 14 miles (23 kilometres) of lakeshore including islands, was surveyed between Montcalm Point and Walkers Point Marina. The islands surveyed were Christmas, Stonewall, Cedar, Old Woman and an island opposite Walkers Point. The drainage basin is Lake Huron.

The shoreline is characterized by shallow till soils and Precambrian Shield ridges. A mixture of coniferous and deciduous trees cover the landscape.

There were 175 private sewage disposal systems inspected on Lake Muskoka during the summer of 1980. Of these, 61 or 34.9% were classified as seriously substandard, 24 or 13.7% were unsatisfactory due to improper disposal of solid waste or wash water, 8 or 4.6% were classified as direct polluters and 17 systems or 9.7% were unclassified by the students at the end of the survey.

As of December 31st, 1980, 40 faulty systems have been corrected and 4 owners have signed agreements to have work completed during the construction season of 1981. The remainder were notified by letter of their problem and Ministry Environmental Officers are currently directing their efforts towards obtaining commitments from these owners.



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LAKE MUSKOKA
1980 COTTAGE POLLUTION
CONTROL PROGRAM

SCALE

DRAWN BY G.B.W.

DATE DEC. 1980

CHECKED BY T.L.H.

DRAWING NO.

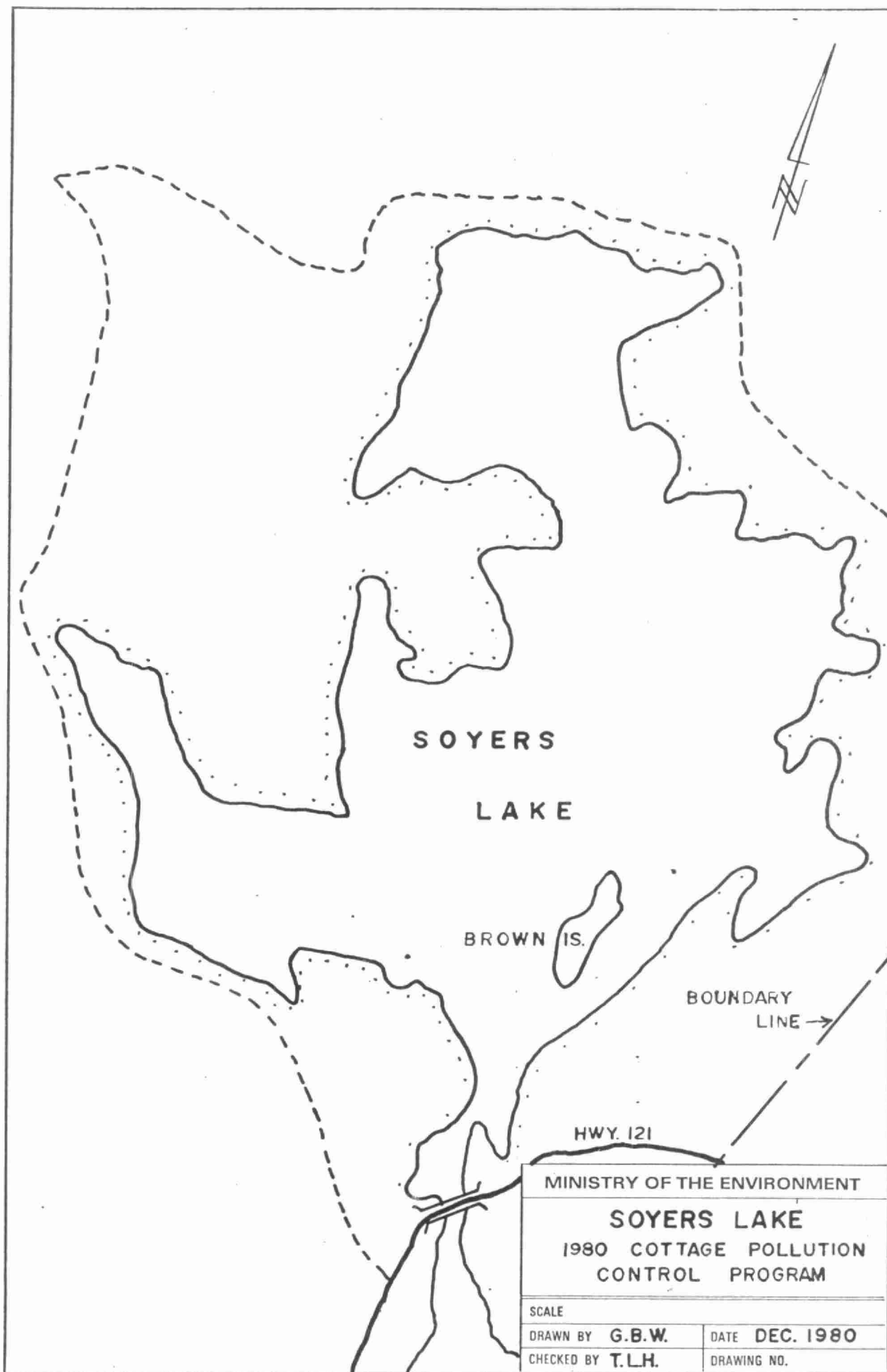
SOYERS LAKE

Soyers Lake is located in the County of Haliburton, Minden Township, Latitude $45^{\circ} 02'$ and Longitude $78^{\circ} 36.5'$. The perimeter of the lake is 10.5 miles (16.9 kilometres) and the surface area is 813.4 acres (329 hectares). The maximum depth is 160 feet (48.8 metres) and the mean depth is 62 feet (18.9 metres). The lake is part of the Trent River drainage basin.

The shoreline of the lake is shallow till and rock ridges. The north bay is a southern tip of a spillway.

There were 142 private sewage disposal systems inspected on Soyers Lake during the summer of 1980. Of these, 63 or 44.4% were classified as seriously substandard, 24 or 16.9% were unsatisfactory due to improper disposal of solid waste or washwater, 5 or 3.5% were classified as direct polluters and 5 systems or 3.5% were unclassified by the students at the end of the survey.

As of December 31st, 1980, 28 faulty systems have been corrected and 6 owners have signed agreements to have work completed during the construction season of 1981.



STEWART LAKE

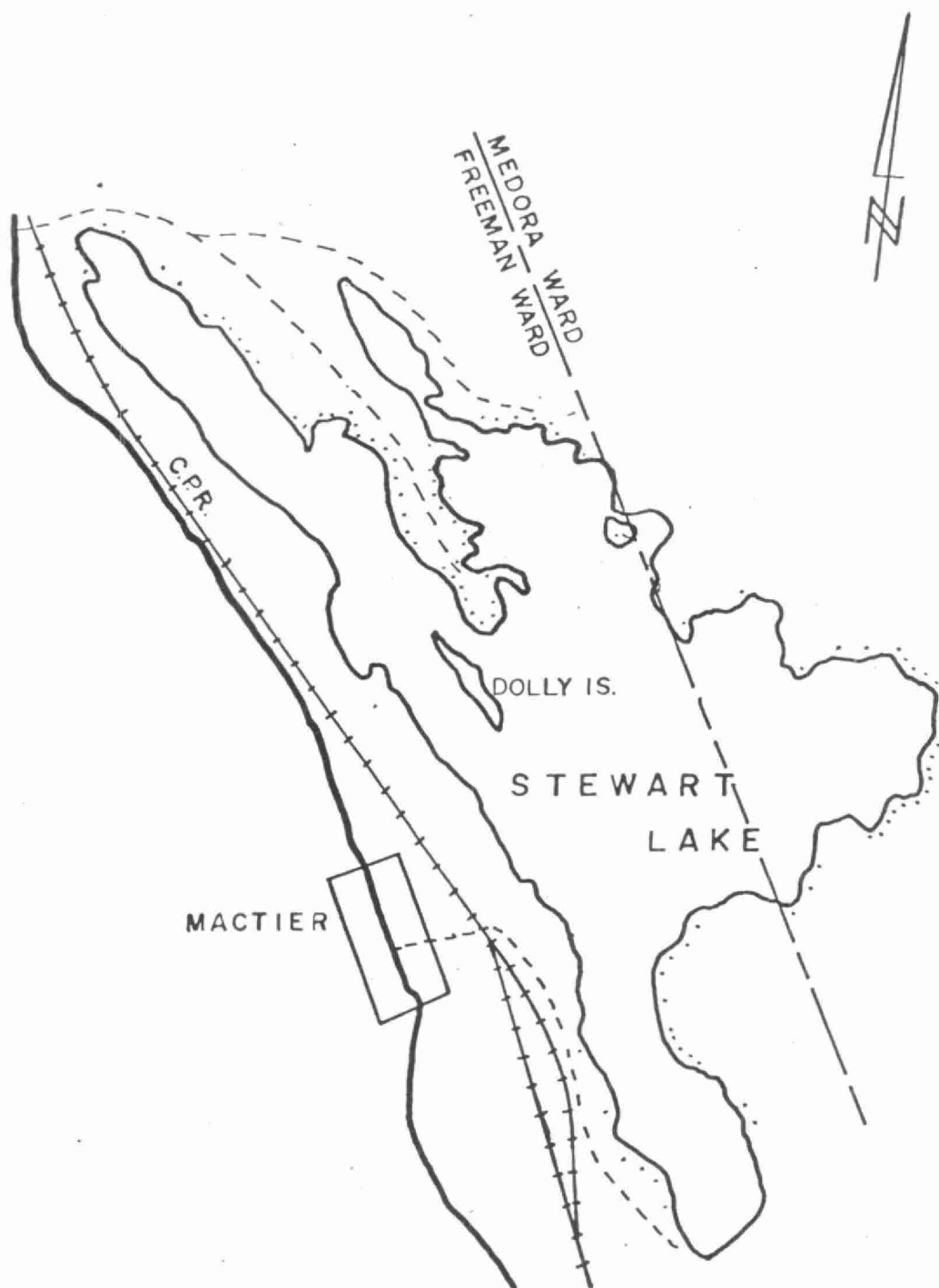
Stewart Lake is divided between the area municipality of Muskoka Lakes, Medora North Ward and area municipality of Georgian Bay, Freeman Ward. The lake lies on Latitude $45^{\circ} 08'$ and Longitude $79^{\circ} 46'$. The Village of MacTier is located on the west side of the lake.

The perimeter of the lake is 6.3 miles (10.1 kilometres), the surface area of the lake is 384 acres (155 hectares). The maximum depth of the lake is 60.6 feet (20 metres) and the mean depth is 21.6 feet (7.1 metres). The lake is part of the Muskoka Drainage Basin.

The west side of the lake is part of a sand plain, the remainder being shallow till with rock outcroppings.

There were 97 private sewage disposal systems inspected on Stewart Lake during the summer of 1980. Of these, 26 or 26.8% were classified as seriously substandard, 31 or 32% were unsatisfactory due to improper disposal of solid waste or washwater, 3 or 3.1% were classified as direct polluters and 4 systems or 4.1% were unclassified by the students at the end of the survey.

As of December 31st, 1980, 31 faulty systems have been corrected and 3 owners have signed agreements to have work completed during the construction season of 1981. The remainder were notified by letter of their problem and Ministry Environmental Officers are currently directing their efforts towards obtaining commitments from these owners.



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STEWART LAKE
1980 COTTAGE POLLUTION
CONTROL PROGRAM

SCALE

DRAWN BY G.B.W.

DATE DEC. 1980

CHECKED BY T.L.H.

DRAWING NO.

LAKES SURVEYED - MUSKOKA-HALIBURTON

<u>YEAR OF SURVEY</u>	<u>LAKE</u>	<u>NUMBER OF SYSTEMS INSPECTED</u>
1967	Six Mile (Crooked Bay)	165
1969	Riley	150
1970	Sparrow	302
1971	Muskoka (Muskoka Bay)	270
1971	Leonard	112
1974	Bass (Ryde)	23
1974	Clear (Wood)	155
1974	Harp	78
1974	Kahshe	481
1974	Twelve Mile Bay	168
1974	Wood	205
1975	Muskoka (Bala Bay)	280
1975	Dark	38
1975	Gull (Muskoka)	138
1975	Gull (Haliburton)	413
1975	Silver	37
1975	Three Mile	542
1976	Joseph (Ames Point)	25
1976	Muskoka (Sandy Bay)	17
1976	Dickie	121
1976	Go Home Bay	119
1976	Loon	175
1976	Muldrew	378
1976	Ril	140
1976	Turtle	63
1977	Honey Harbour (South Bay)	834
1977	Muskoka (Milford Bay)	292
1977	Paudash (Haliburton)	364
1977	Joseph (Woodroffe Bay)	44
1978	Honey Harbour (North Bay)	476
1978	Severn River	833
1978	Indian River	67
1979	Esson	117
1979	Kashagawigamog (North Half)	533
1979	Muskoka	463
1979	Miskwabi	78
1979	Nine Mile	138
1980	Black Lake	57
1980	Kashagawigamog (South Half)	273
1980	Lake Muskoka	175
1980	Soyer's Lake	142
1980	Stewart Lake	97

APPENDIX 1

PRELIMINARY CLASSIFICATION OF SYSTEMS INSPECTED

1980

BODY OF WATER	NUMBER OF SYSTEMS INSPECTED	CLASSIFICATION OF SYSTEMS *															
		SATISFACTORY		SATISFACTORY PERFORMANCE		SERIOUSLY SUBSTANDARD		NUISANCE (WASH WATER)		NUISANCE (SOLID WASTE)		DIRECT POLLUTER		UNCLASSIFIED TEMPORARILY		UNCLASSIFIED	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Black Lake	51	9	17.7	16	31.4	17	33.3	4	7.8	2	3.9	2	3.9	1	2.0		
Kashaga-wigamog Lake	273	20	7.3	51	18.7	122	44.7	36	13.2	9	3.3	13	4.8	22	8.0		
Lake Muskoka	175	24	13.7	41	23.4	61	34.9	17	9.7	7	4.0	8	4.6	17	9.7		
Soyers Lake	142	22	15.5	23	16.2	63	44.4	18	12.7	6	4.2	5	3.5	5	3.5		
Stewart Lake	97	8	8.2	25	25.8	26	26.8	29	29.9	2	2.1	3	3.1	4	4.1		
	738	83	11.3	156	21.1	289	39.2	104	14.1	26	3.5	31	4.2	49	6.6		

* See Page 4 for definition of classifications

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